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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,559	11/09/2001	David Kenyon Vail	GCSD-1162 (51234)	2979
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ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A. 1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE P.O. BOX 3791 ORLANDO, FL 32802-3791				
			EXAMINER VERBITSKY, GAIL KAPLAN	
			ART UNIT 2859	PAPER NUMBER

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/991,559

Applicant(s)

VAIL ET AL.

Examiner

Gail Verbitsky

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,21-25,33,34,37,38 and 45-47 is/are pending in the application.
- 4a) Of the above claim(s) 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,21-25,33,34,37,38 and 45-47 is/are rejected.
- 7) ☐ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) 19 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 19 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on 19 is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No.         .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s)         .
- 4) ☐ Interview Summary (PTO-413) Paper No(s)         .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:         .

Art Unit: 2859

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. 119(e).

### *Claim Objections*

2. Claims 1, 45-47 are finally objected due to the following informalities:

Claim 1: "the predetermined threshold" in line 15 lacks antecedent basis,

Claims 45-47: It appears, that the "capacitance variation" of the capacitor, as stated in claims 45-47 has not been described in the specification. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-7, 19, 21-23, 33-34, 37-38, 45-47 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Levine in view of Lobban (U.S. 6612737).

Levine discloses in Fig. 2 a device forming a digital signal representing an environmental condition, i.e., temperature (col. 1, lines 31-34), the device comprising a capacitor 220 which is

Art Unit: 2859

charged through a thermistor 211 to a predetermined voltage threshold. When said voltage threshold is reached, a microprocessor (controller) 110, having a time counter, determines a time (elapsed time) which corresponds to a temperature at the thermistor. When a second measurement is done, the elapsed time is corresponding to a resistance on a precision (circuit element/ calibration) resistor 213 (col. 2, lines 20-33 and col. 6, lines 47-68). Typically the microprocessor looks at a look-up table to convert the time to the corresponding temperature (col. 5, lines 19-21). Inherently, the microprocessor comprises a control logic for controlling a driver which should be coupled to said thermistor/ calibration resistor. The controller has a transistor 144 connected to the capacitor in order to discharge it when it is determined that the capacitor has been charged responsive to a logic signal "1" from the controller. Levine measures the charging time. It is inherent, that the charging time (time constant), is a function of the capacitance (capacitance variation) of the capacitor, and thus, temperature. It is also inherent, that the controller does not charge the capacitor constantly, but does it sequentially.

Levine does not disclose a plurality of calibration resistors of different values, as stated in claim 1, and thus, high and low calibration resistance value, as stated in claim 4, with the remaining limitations of claims 1-2, 4-7, 19, 21, 22-23, 33-34, 37-38, 45-47.

Lobban teaches a first and a second (plurality of) calibration resistors. Lobban teaches to alternately (sequentially) couple a circuit element (C/F converter) to a first reference/ calibration resistor, a second reference/ calibration resistor, a temperature sensing resistor. The different reference/ calibration resistors represent different (high/ low) value/ calibration range.

Art Unit: 2859

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Levine, so as to have the calibration device comprising at least two, high and low resistors (ranges), as taught by Lobban, in order to allow the device to be used with measuring/ determining different temperature ranges.

With respect to claims 33-35, 37-38, 47: the method steps will be met during the normal operation of the device.

5. Claims 8, 24 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Levine and Lobban as applied to claims 1-2, 4-7, 19, 21-23, 33-34, 37-38, 45-47 above, and further in view of Beery et al. (U.S. 3946285) [hereinafter Beery].

Levine and Lobban disclose the device as stated above in paragraph 4.

They do not disclose a Schmitt (Shmitt) hysteresis device.

Beery discloses the device in the filed of applicant's endeavor comprising a Schmitt hysteresis device (trigger) connected to a capacitor and providing hysteresis and reducing noise.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the transistor (trigger) connected to the capacitor, disclosed by Levine, with a Schmitt hysteresis trigger, as taught by Beery, so as to provide a circuit with a hysteresis and thus, to reduce noise, as already suggested by Beery, in order to improve an accuracy of the device.

Art Unit: 2859

6. Claims 9, 25 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Levine and Lobban as applied to claims 1-2, 4-7, 19, 21-23, 33-34, 37-38, 45-47 above, and further in view of Kumar et al. (U.S. 6416471) [hereinafter Kumar].

Levine and Lobban disclose the device as stated above in paragraph 4.

They do not disclose that the controller is implemented on an ASIC.

Kumar teaches that it is known in the art that a microcontroller (controller) can be implemented in an ASIC (col. 9, lines 30-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Levine and Lobban, so as to implement a controller in an ASIC, as taught by Kumar, in order to provide a device positioned on a single printed circuit board and thus, minimize the size of the device and simplify the manufacturing process.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2859

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-2, 4-9, 21-25, 33-34, 37-38, 45-47 have been considered but are moot in view of the new ground(s) of rejection necessitated by the present amendment.

Applicant states that the combination of Levine and Chen is improper because Chen uses a Whetstone bridge, and that Levine and Chen have different intended uses of their devices.

A) This argument is not persuasive because, the Examiner, in the rejection on the merits, only uses Chen for its teaching that the calibration device can comprise high and low values.

B) this argument is moot in view of the new ground(s) of rejection necessitated by the present amendment.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

Art Unit: 2859

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior cited in the PTO-892 and not mentioned above disclose related devices and methods.

11. Any inquiry concerning this communication should be directed to Examiner Verbitsky who can be reached at (703) 306-5473 Monday through Friday 7:00 to 4:00 ET.

Any inquiry of general nature should be directed to the Group Receptionist who can be reached at (703) 308-0956.

GKV

30 September, 2003

Gail Verbitsky



Patent Examiner, TC 2800